

***LineUp With Math™* Alignment**
Michigan Mathematics
Content Standards and Working Draft Benchmarks

Strand I. Patterns, Relationships and Functions

Content Standard 1: Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships, and construct representations of mathematical relationships. (Patterns)

Benchmark	<i>LineUp With Math™</i> Activities
5. Use patterns and reasoning to solve problems and explore new content.	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

Content Standard 2: Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability, and compare patterns of change. (Variability and Change)

Benchmark	<i>LineUp With Math™</i> Activities
6. Increase their use of functions and mathematical models to solve problems in context.	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

Strand II. Geometry and Measurement

Content Standard 2: Students identify locations of objects, identify location relative to other objects, and describe the effects of transformations (e.g., sliding, flipping, turning, enlarging, reducing) on an object. (Position)

Benchmark	<i>LineUp With Math™</i> Activities
5. Use concepts of position, direction and orientation to describe the physical world and to solve problems.	--Predict and plot the relative motion of two or more airplanes on given paths.

Content Standard 3: Students compare attributes of two objects, or of one object with a standard (unit), and analyze situations to determine what measurement(s) should be made and to what level of precision. (Measurement)

Benchmark	<i>LineUp With Math™</i> Activities
5. Use proportional reasoning and indirect measurements, including applications of trigonometric ratios, to measure inaccessible distances and to determine derived measures such as density.	--Use an interactive simulator plus calculation worksheets to apply proportional reasoning to identify and resolve distance, rate, time conflicts in air traffic control.
6. Apply measurement to describe the real world and to solve problems.	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

Strand III. Data Analysis and Statistics

Content Standard 3: Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions. (Inference and Prediction)

Benchmark

3. Formulate and communicate arguments and conclusions based on data and evaluate their arguments and those of others.

LineUp With Math™ Activities

--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.

5. Employ investigations, mathematical models, and simulations to make inferences and predictions to answer questions and solve problems.

--Use an interactive simulator plus calculation worksheets to model and resolve air traffic control conflicts.

--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.

Strand IV. Number Sense and Numeration

Content Standard 2: Students recognize that numbers are used in different ways such as counting, measuring, ordering and estimating, understand and produce multiple representations of a number, and translate among equivalent representations. (Representation and Uses of Numbers)

Benchmark

4. Apply estimation in increasingly complex situations.

LineUp With Math™ Activities

--Predict and resolve aircraft conflicts and explain results of mathematical calculations and simulations.

Strand V. Numerical and Algebraic Operations and Analytical Thinking

Content Standard 2: Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems. (Algebraic and Analytic Thinking)

Benchmark

5. Explore problems that reflect the contemporary uses of mathematics in significant contexts and use the power of technology and algebraic and analytic reasoning to experience the ways mathematics is used in society.

LineUp With Math™ Activities

--Use an interactive simulator to identify distance, rate, time conflicts in air traffic control problems and resolve the conflicts by varying plane speeds or changing plane routes.